

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

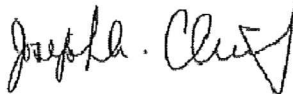
## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.  
TestAmerica Westfield  
Westfield Executive Park  
53 Southampton Road  
Westfield, MA 01085  
Tel: (413)572-4000

TestAmerica Job ID: 360-40979-2  
Client Project/Site: Olin Chemical

For:  
Olin Corporation  
PO BOX 248  
Charleston, Tennessee 37310-0248

Attn: Mr. James Cashwell



Authorized for release by:  
7/3/2012 4:40:15 PM

Joe Chimi  
Report Production Representative  
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Designee for  
Becky Mason  
Project Manager II  
becky.mason@testamericainc.com

CHECKED FOR COMPLETENESS  
OF PARAMETERS ORDERED BY:



*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

### LINKS

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## Case Narrative

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

**Job ID: 360-40979-2**

**Laboratory: TestAmerica Westfield**

### Narrative

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### Receipt

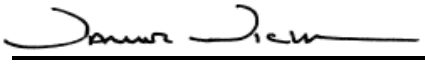
The samples were received on 6/7/2012 4:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.7° C and 4.6° C.

### Metals

Method 6010C: At the request of the client, an abbreviated/modified MCP analyte list was reported for this job.

No analytical or quality issues were noted.

# MassDEP Analytical Protocol Certification Form

Laboratory Name: <b>TestAmerica Westfield</b>		Project #: <b>360-40979-2</b>	
Project Location: <b>Wilmington</b>		RTN:	
This form provides certifications for the following data set: list Laboratory Sample ID Number(s): <b>360-40979-(1-8)</b>			
Matrices: <input checked="" type="checkbox"/> Groundwater/Surface Water <input type="checkbox"/> Soil/Sediment <input type="checkbox"/> Drinking Water <input type="checkbox"/> Air <input type="checkbox"/> Other:			
<b>CAM Protocols (check all that apply below):</b>			
8260 VOC CAM II A <input type="checkbox"/>	7470/7471 Hg CAM III B <input type="checkbox"/>	Mass DEP VPH CAM IV A <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>
8270 SVOC CAM II B <input type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	Mass DEP EPH CAM IV B <input type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	8082 PCB CAM V A <input type="checkbox"/>	9014 Total Cyanide/PAC CAM VI A <input type="checkbox"/>
			7196 Hex Cr CAM VI B <input type="checkbox"/>
			Mass DEP APH CAM IX A <input type="checkbox"/>
			8330 Explosives CAM VIII A <input type="checkbox"/>
			TO-15 VOC CAM IX B <input type="checkbox"/>
<b>Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status</b>			
<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding time.		
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?		
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?		
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?		
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>E</b>	a. VPH, EPH and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).		
	<input type="checkbox"/> Yes <input type="checkbox"/> No		
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?		
	<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?		
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<b>Responses to Questions G, H and I below are required for "Presumptive Certainty" status</b>			
<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?		
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>		
<b>Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WCS-07-350</b>			
<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?		
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <sup>1</sup>		
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s) ?		
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>		
<sup>1</sup> All negative responses must be addressed in an attached laboratory narrative.			
<i>I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.</i>			
Signature: <u></u>		Position: <u>Technical Manager</u>	
Printed Name: <u>James Wickham</u>		Date: <u>7/3/12 16:37</u>	
This form has been electronically signed and approved			

## Detection Summary

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

### Client Sample ID: OC-SW-ISC01

### Lab Sample ID: 360-40979-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	100		100	13	ug/L	1		6010C	Dissolved
Chromium	11		5.0	0.66	ug/L	1		6010C	Dissolved
Sodium	64000		2000	780	ug/L	1		6010C	Dissolved

### Client Sample ID: OC-SW-ISCO2

### Lab Sample ID: 360-40979-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	120		100	13	ug/L	1		6010C	Dissolved
Chromium	37		5.0	0.66	ug/L	1		6010C	Dissolved
Sodium	83000		2000	780	ug/L	1		6010C	Dissolved

### Client Sample ID: OC-SW-ISCO3

### Lab Sample ID: 360-40979-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	25	J	100	13	ug/L	1		6010C	Dissolved
Sodium	71000		2000	780	ug/L	1		6010C	Dissolved

### Client Sample ID: OC-SW-PZ-16RRSW

### Lab Sample ID: 360-40979-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	360		100	13	ug/L	1		6010C	Dissolved
Chromium	160		5.0	0.66	ug/L	1		6010C	Dissolved
Sodium	95000		2000	780	ug/L	1		6010C	Dissolved

### Client Sample ID: OC-SW-PZ-17RRSW

### Lab Sample ID: 360-40979-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	530		100	13	ug/L	1		6010C	Dissolved
Chromium	260		5.0	0.66	ug/L	1		6010C	Dissolved
Sodium	99000		2000	780	ug/L	1		6010C	Dissolved

### Client Sample ID: OC-SW-PZ-18RSW

### Lab Sample ID: 360-40979-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	160		100	13	ug/L	1		6010C	Dissolved
Chromium	15		5.0	0.66	ug/L	1		6010C	Dissolved
Sodium	63000		2000	780	ug/L	1		6010C	Dissolved

### Client Sample ID: OC-SW-SD-17

### Lab Sample ID: 360-40979-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	2900		100	13	ug/L	1		6010C	Dissolved
Chromium	660		5.0	0.66	ug/L	1		6010C	Dissolved
Sodium	99000		2000	780	ug/L	1		6010C	Dissolved

### Client Sample ID: OC-SW-PZ-18RSW DUP

### Lab Sample ID: 360-40979-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	150		100	13	ug/L	1		6010C	Dissolved
Chromium	15		5.0	0.66	ug/L	1		6010C	Dissolved
Sodium	64000		2000	780	ug/L	1		6010C	Dissolved

## Method Summary

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL WFD

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL WFD = TestAmerica Westfield, Westfield Executive Park, 53 Southampton Road, Westfield, MA 01085, TEL (413)572-4000



## Sample Summary

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
360-40979-1	OC-SW-ISC01	Water	06/07/12 10:30	06/07/12 16:40
360-40979-2	OC-SW-ISCO2	Water	06/07/12 08:45	06/07/12 16:40
360-40979-3	OC-SW-ISCO3	Water	06/07/12 08:30	06/07/12 16:40
360-40979-4	OC-SW-PZ-16RRSW	Water	06/07/12 09:05	06/07/12 16:40
360-40979-5	OC-SW-PZ-17RRSW	Water	06/07/12 09:20	06/07/12 16:40
360-40979-6	OC-SW-PZ-18RSW	Water	06/07/12 09:55	06/07/12 16:40
360-40979-7	OC-SW-SD-17	Water	06/07/12 09:35	06/07/12 16:40
360-40979-8	OC-SW-PZ-18RSW DUP	Water	06/07/12 09:55	06/07/12 16:40

## Client Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

**Client Sample ID: OC-SW-ISC01**

**Lab Sample ID: 360-40979-1**

**Date Collected: 06/07/12 10:30**

**Matrix: Water**

**Date Received: 06/07/12 16:40**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	100		100	13	ug/L		06/27/12 08:57	06/28/12 15:03	1
Chromium	11		5.0	0.66	ug/L		06/27/12 08:57	06/28/12 15:03	1
Sodium	64000		2000	780	ug/L		06/27/12 08:57	06/28/12 15:03	1



## Client Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

**Client Sample ID: OC-SW-ISCO2**

**Lab Sample ID: 360-40979-2**

**Date Collected: 06/07/12 08:45**

**Matrix: Water**

**Date Received: 06/07/12 16:40**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	120		100	13	ug/L		06/27/12 08:57	06/28/12 15:05	1
Chromium	37		5.0	0.66	ug/L		06/27/12 08:57	06/28/12 15:05	1
Sodium	83000		2000	780	ug/L		06/27/12 08:57	06/28/12 15:05	1

## Client Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

**Client Sample ID: OC-SW-ISCO3**

**Lab Sample ID: 360-40979-3**

**Date Collected: 06/07/12 08:30**

**Matrix: Water**

**Date Received: 06/07/12 16:40**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	25	J	100	13	ug/L		06/27/12 08:57	06/28/12 15:08	1
Chromium	ND		5.0	0.66	ug/L		06/27/12 08:57	06/28/12 15:08	1
Sodium	71000		2000	780	ug/L		06/27/12 08:57	06/28/12 15:08	1

## Client Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

**Client Sample ID: OC-SW-PZ-16RRSW**

**Lab Sample ID: 360-40979-4**

**Date Collected: 06/07/12 09:05**

**Matrix: Water**

**Date Received: 06/07/12 16:40**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	360		100	13	ug/L		06/27/12 08:57	06/28/12 15:11	1
Chromium	160		5.0	0.66	ug/L		06/27/12 08:57	06/28/12 15:11	1
Sodium	95000		2000	780	ug/L		06/27/12 08:57	06/28/12 15:11	1

## Client Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

**Client Sample ID: OC-SW-PZ-17RRSW**

**Lab Sample ID: 360-40979-5**

**Date Collected: 06/07/12 09:20**

**Matrix: Water**

**Date Received: 06/07/12 16:40**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	530		100	13	ug/L		06/27/12 08:57	06/28/12 15:14	1
Chromium	260		5.0	0.66	ug/L		06/27/12 08:57	06/28/12 15:14	1
Sodium	99000		2000	780	ug/L		06/27/12 08:57	06/28/12 15:14	1

## Client Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

**Client Sample ID: OC-SW-PZ-18RSW**

**Lab Sample ID: 360-40979-6**

**Date Collected: 06/07/12 09:55**

**Matrix: Water**

**Date Received: 06/07/12 16:40**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	160		100	13	ug/L		06/27/12 08:57	06/28/12 14:42	1
Chromium	15		5.0	0.66	ug/L		06/27/12 08:57	06/28/12 14:42	1
Sodium	63000		2000	780	ug/L		06/27/12 08:57	06/28/12 14:42	1

## Client Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

**Client Sample ID: OC-SW-SD-17**

**Lab Sample ID: 360-40979-7**

**Date Collected: 06/07/12 09:35**

**Matrix: Water**

**Date Received: 06/07/12 16:40**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	2900		100	13	ug/L		06/27/12 08:57	06/28/12 15:17	1
Chromium	660		5.0	0.66	ug/L		06/27/12 08:57	06/28/12 15:17	1
Sodium	99000		2000	780	ug/L		06/27/12 08:57	06/28/12 15:17	1

## Client Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

**Client Sample ID: OC-SW-PZ-18RSW DUP**

**Lab Sample ID: 360-40979-8**

**Date Collected: 06/07/12 09:55**

**Matrix: Water**

**Date Received: 06/07/12 16:40**

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	150		100	13	ug/L		06/27/12 08:57	06/28/12 15:20	1
Chromium	15		5.0	0.66	ug/L		06/27/12 08:57	06/28/12 15:20	1
Sodium	64000		2000	780	ug/L		06/27/12 08:57	06/28/12 15:20	1



## Definitions/Glossary

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

### Qualifiers

#### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## QC Association Summary

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

### Metals

#### Prep Batch: 92431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
360-40979-1	OC-SW-ISC01	Dissolved	Water	3010A	
360-40979-2	OC-SW-ISCO2	Dissolved	Water	3010A	
360-40979-3	OC-SW-ISCO3	Dissolved	Water	3010A	
360-40979-4	OC-SW-PZ-16RRSW	Dissolved	Water	3010A	
360-40979-5	OC-SW-PZ-17RRSW	Dissolved	Water	3010A	
360-40979-6	OC-SW-PZ-18RSW	Dissolved	Water	3010A	
360-40979-6 MS	OC-SW-PZ-18RSW	Dissolved	Water	3010A	
360-40979-6 MSD	OC-SW-PZ-18RSW	Dissolved	Water	3010A	
360-40979-7	OC-SW-SD-17	Dissolved	Water	3010A	
360-40979-8	OC-SW-PZ-18RSW DUP	Dissolved	Water	3010A	
LCS 360-92431/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 360-92431/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	
MB 360-92431/1-A	Method Blank	Total/NA	Water	3010A	

#### Analysis Batch: 92536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
360-40979-1	OC-SW-ISC01	Dissolved	Water	6010C	92431
360-40979-2	OC-SW-ISCO2	Dissolved	Water	6010C	92431
360-40979-3	OC-SW-ISCO3	Dissolved	Water	6010C	92431
360-40979-4	OC-SW-PZ-16RRSW	Dissolved	Water	6010C	92431
360-40979-5	OC-SW-PZ-17RRSW	Dissolved	Water	6010C	92431
360-40979-6	OC-SW-PZ-18RSW	Dissolved	Water	6010C	92431
360-40979-6 MS	OC-SW-PZ-18RSW	Dissolved	Water	6010C	92431
360-40979-6 MSD	OC-SW-PZ-18RSW	Dissolved	Water	6010C	92431
360-40979-7	OC-SW-SD-17	Dissolved	Water	6010C	92431
360-40979-8	OC-SW-PZ-18RSW DUP	Dissolved	Water	6010C	92431
LCS 360-92431/2-A	Lab Control Sample	Total/NA	Water	6010C	92431
LCSD 360-92431/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	92431
MB 360-92431/1-A	Method Blank	Total/NA	Water	6010C	92431

# QC Sample Results

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

## Method: 6010C - Metals (ICP)

Lab Sample ID: MB 360-92431/1-A

Matrix: Water

Analysis Batch: 92536

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 92431

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		100	13	ug/L		06/27/12 08:57	06/28/12 14:33	1
Chromium	ND		5.0	0.66	ug/L		06/27/12 08:57	06/28/12 14:33	1
Sodium	ND		2000	780	ug/L		06/27/12 08:57	06/28/12 14:33	1

Lab Sample ID: LCS 360-92431/2-A

Matrix: Water

Analysis Batch: 92536

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 92431

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	5000	4990		ug/L		100	80 - 120
Chromium	1000	979		ug/L		98	80 - 120
Sodium	20000	19100		ug/L		96	80 - 120

Lab Sample ID: LCSD 360-92431/3-A

Matrix: Water

Analysis Batch: 92536

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 92431

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	5000	4670		ug/L		93	80 - 120	7	20
Chromium	1000	931		ug/L		93	80 - 120	5	20
Sodium	20000	18000		ug/L		90	80 - 120	6	20

Lab Sample ID: 360-40979-6 MS

Matrix: Water

Analysis Batch: 92536

Client Sample ID: OC-SW-PZ-18RSW

Prep Type: Dissolved

Prep Batch: 92431

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	160		5000	4750		ug/L		92	75 - 125
Chromium	15		1000	941		ug/L		93	75 - 125
Sodium	63000		20000	81000		ug/L		92	75 - 125

Lab Sample ID: 360-40979-6 MSD

Matrix: Water

Analysis Batch: 92536

Client Sample ID: OC-SW-PZ-18RSW

Prep Type: Dissolved

Prep Batch: 92431

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	160		5000	4770		ug/L		92	75 - 125	0	20
Chromium	15		1000	930		ug/L		91	75 - 125	1	20
Sodium	63000		20000	79700		ug/L		85	75 - 125	2	20

# Lab Chronicle

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

**Client Sample ID: OC-SW-ISC01**

**Date Collected: 06/07/12 10:30**

**Date Received: 06/07/12 16:40**

**Lab Sample ID: 360-40979-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			92431	06/27/12 08:57	BH	TAL WFD
Dissolved	Analysis	6010C		1	92536	06/28/12 15:03	TJS	TAL WFD

**Client Sample ID: OC-SW-ISCO2**

**Date Collected: 06/07/12 08:45**

**Date Received: 06/07/12 16:40**

**Lab Sample ID: 360-40979-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			92431	06/27/12 08:57	BH	TAL WFD
Dissolved	Analysis	6010C		1	92536	06/28/12 15:05	TJS	TAL WFD

**Client Sample ID: OC-SW-ISCO3**

**Date Collected: 06/07/12 08:30**

**Date Received: 06/07/12 16:40**

**Lab Sample ID: 360-40979-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			92431	06/27/12 08:57	BH	TAL WFD
Dissolved	Analysis	6010C		1	92536	06/28/12 15:08	TJS	TAL WFD

**Client Sample ID: OC-SW-PZ-16RRSW**

**Date Collected: 06/07/12 09:05**

**Date Received: 06/07/12 16:40**

**Lab Sample ID: 360-40979-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			92431	06/27/12 08:57	BH	TAL WFD
Dissolved	Analysis	6010C		1	92536	06/28/12 15:11	TJS	TAL WFD

**Client Sample ID: OC-SW-PZ-17RRSW**

**Date Collected: 06/07/12 09:20**

**Date Received: 06/07/12 16:40**

**Lab Sample ID: 360-40979-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			92431	06/27/12 08:57	BH	TAL WFD
Dissolved	Analysis	6010C		1	92536	06/28/12 15:14	TJS	TAL WFD

**Client Sample ID: OC-SW-PZ-18RSW**

**Date Collected: 06/07/12 09:55**

**Date Received: 06/07/12 16:40**

**Lab Sample ID: 360-40979-6**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			92431	06/27/12 08:57	BH	TAL WFD
Dissolved	Analysis	6010C		1	92536	06/28/12 14:42	TJS	TAL WFD

## Lab Chronicle

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

**Client Sample ID: OC-SW-SD-17**

**Lab Sample ID: 360-40979-7**

**Date Collected: 06/07/12 09:35**

**Matrix: Water**

**Date Received: 06/07/12 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			92431	06/27/12 08:57	BH	TAL WFD
Dissolved	Analysis	6010C		1	92536	06/28/12 15:17	TJS	TAL WFD

**Client Sample ID: OC-SW-PZ-18RSW DUP**

**Lab Sample ID: 360-40979-8**

**Date Collected: 06/07/12 09:55**

**Matrix: Water**

**Date Received: 06/07/12 16:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			92431	06/27/12 08:57	BH	TAL WFD
Dissolved	Analysis	6010C		1	92536	06/28/12 15:20	TJS	TAL WFD

**Laboratory References:**

TAL WFD = TestAmerica Westfield, Westfield Executive Park, 53 Southampton Road, Westfield, MA 01085, TEL (413)572-4000

## Certification Summary

Client: Olin Corporation  
Project/Site: Olin Chemical

TestAmerica Job ID: 360-40979-2

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Westfield	Connecticut	State Program	1	PH-0494
TestAmerica Westfield	Maine	State Program	1	MA00014
TestAmerica Westfield	New Hampshire	NELAC	1	2539
TestAmerica Westfield	Rhode Island	State Program	1	LAO00057
TestAmerica Westfield	Vermont	State Program	1	VT-10843

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

# State Accreditation Matrix

Method Name	Description	Primary Accreditation	
		New Hampshire (NELAC)	Mass
180.1	Turbidity, Nephelometric	P	P
245.1	Mercury (CVAA)	NP/P	NP
300	Anions, Ion Chromatography	NP/P	NP/P
410.4	COD	NP	NP
524.2	Volatile Org Comp (GC/MS)(list upon request)	P	P
524.2	Trihalomethane compounds	P	P
608	Organochlorine Pest/PCBs (list upon request)	NP	NP
624	Volatile Org Comp (GC/MS)(list upon request)	NP	NP
625	Semivolatile Org Comp (GC/MS)(list upon request)	NP	NP
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW	
1103.1	E.coli		ambient/source
3546	Microwave Extraction	SW	
5035	Closed System Purge and Trap	SW	
6020	Metals (ICP/MS) (list upon request)	NP	
10-107-06-2	Nitrogen, Total Kjeldahl	NP	NP
200.7 Rev 4.4	Metals (ICP)(list upon request)	NP/P	NP/P
200.8 Rev 5.4	Metals (ICP/MS) (list upon request)	NP/P	NP/P
3005A	Preparation, Total Recoverable or Dissolved Metals	NP/P	
3010A	Preparation, Total Metals	NP/P	
3020A	Preparation, Total Metals	NP/P	
3050B	Preparation, Metals	SW	
3510C	Liquid-Liquid Extraction (Separatory Funnel)	NP	
5030B	Purge and Trap	NP	
6010C	Metals (ICP)(list upon request)	NP/SW	
7196A	Chromium, Hexavalent	NP/SW	
7470A	Mercury (CVAA)	NP	
7471A	Mercury (CVAA)	SW	
8081B	Organochlorine Pesticides (GC)(list upon request)	NP/SW	
8082A	PCBs by Gas Chromatography(list upon request)	NP/SW	
8260C	Volatile Org Comp. (GC/MS)(list upon request)	NP/SW	
8270D	Semivolatile Comp.(GC/MS)(list upon request)	NP/SW	
9012A	Cyanide, Total and/or Amenable	NP/SW	
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	NP	
9045C	pH	SW	
CT ETPH	Conn - Ext. Total petroleum Hydrocarbons (GC)	NP/SW	
Enterolert	Enterococcus		ambient/source
L107041C	Nitrogen, Nitrate	NP	
L107-06-1B	Nitrogen Ammonia	NP	NP
L204001A CN	Cyanide, Total	P	NP/P
L210-001A	Phenolics, Total Recoverable	NP	NP
MA-EPH	Mass - Extractable Petroleum Hydrocarbons (GC)	NP/SW	
MAVPH	Mass - Volatile Petroleum Hydrocarbons (GC)	NP/SW	
SM 2320B	Alkalinity	NP/P	NP/P
SM 2340B	Total Hardness (as CaCO3) by calculation	NP/P	NP
SM 2510B	Conductivity, Specific Conductance	NP/P	NP/P
SM 2540C	Solids, Total Dissolved (TDS)	NP/P	NP/P
SM 2540D	Solids, Total Suspended (TSS)	NP	NP
SM 3500 CR D	Chromium, Hexavalent	NP	
SM 4500 Cl F	Chlorine, Residual		NP
SM 4500 H+ B	pH	NP/P	NP/P
SM 4500 NO2 B	Nitrogen, Nitrite	NP	P
SM 4500 P E	Phosphorus, Orthophosphate	NP/P	NP
SM 4500 P E	Phosphorus, Total	NP	NP
SM 4500 S2 D	Sulfide, Total	NP	
SM 5210B	BOD, 5-Day	NP	NP
SM 5310B	Organic Carbon, Total (TOC)	NP/P	NP
SM 9215E	Heterotrophic Plate Count (SimPlate)		P
SM 9222D	Coliforms, Fecal (Membrane Filter)		NP
SM 9223	Coliforms, Total, and E.Coli (Colilert-P/A)		P
SM 9223	Coliforms, Total, and E.Coli (Enumeration)		P

Not all organic compounds are accredited under YNI

For methods with multiple compounds all compounds may not meet TNI criteria, a listing should be obtained from the laboratory

The lab carries additional accreditations with several states. This is the laboratories typical listing but is subject to change based on the laboratories current certification standing.



## Login Sample Receipt Checklist

Client: Olin Corporation

Job Number: 360-40979-2

Login Number: 40979

List Source: TestAmerica Westfield

List Number: 1

Creator: Kolb, Chris M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Westfield Executive Park 53 Southampton Road  
Westfield, MA 01085  
Phone (413) 572-4000 Fax (413) 572-3707

240 Bear Hill Rd. Suite 104  
Waltham, MA 02451  
Phone (781) 466-6900 Fax (781) 466-6901

Chain of Custody Record

<b>Client Information</b> Client Contact: <u>James Cashwell</u> Company: <u>Oliver Corporation</u> Address: <u>51 Barnes St</u> City: <u>Wilmington</u> State, Zip: <u>MA 01887</u> Phone: <u>4333364012</u> Email: <u></u> Project Name/Number: <u></u> Site: <u>Wilmington</u>		Due Date Requested: <u></u> TAT Requested (days): <u></u> Quote #: <u></u> PO #: <u></u> WO #: <u></u> SSON#: <u></u>		Lab P#: <u>Becky Mason</u> E-Mail: <u></u> Carrier Tracking No(s): <u></u>	
<b>Sample Identification</b> Sample Date: <u>6-7-12</u> Sample Time: <u>10:30</u> Sample Type: <u>G=grab</u> Matrix: <u>(Water, Sealed, On-site, AT-Tissue, A=air)</u> Preservation Code: <u></u>		Sampler's Initials: <u>XX</u> Field Filtered Sample?: <u>XX</u> Perform MS/MSD?: <u></u> Lach. 107.06-1.3. Ammonia Cu108 (mon) Custom pick list 25108, 300.0, 2510, 300. Y8Hk		Analysis Requested: <u></u> Total Number of containers: <u></u>	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Active For <u>Months</u>			
Deliverable Requested: I, II, III, IV, Other (Specify) <u></u>		Special Instructions/IOC Requirements: <u></u>			
Relinquished by: <u>Becky Mason</u> Date/Time: <u>6-7-12 1340</u> Company: <u>TH</u>		Received by: <u>Becky Mason</u> Date/Time: <u>6-7-12 1440</u> Company: <u>TH</u>		Relinquished by: <u>Becky Mason</u> Date/Time: <u>6-7-12 1640</u> Company: <u>TH</u>	
Relinquished by: <u>Becky Mason</u> Date/Time: <u>6-7-12 1640</u> Company: <u>TH</u>		Received by: <u>Becky Mason</u> Date/Time: <u>6-7-12 1640</u> Company: <u>TH</u>		Relinquished by: <u>Becky Mason</u> Date/Time: <u>6-7-12 1640</u> Company: <u>TH</u>	
Custody Seats Intact: <u>Yes</u> <u>No</u>		Cooler Temperature(s) °C and Other Remarks: <u>4.0, 3.7 ICE</u>		Page: <u>1 of 1</u> Job #: <u>360-46929</u> Preservation Codes: <u></u> Regulatory programs: <u></u> MCP <input type="checkbox"/> GW/IS1 <input type="checkbox"/> RCP <input type="checkbox"/> CT RSR <input type="checkbox"/> DEP Form <input type="checkbox"/> EDD Required <input type="checkbox"/>	